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(71)Applicant : HAGIWARA KOSHIRO

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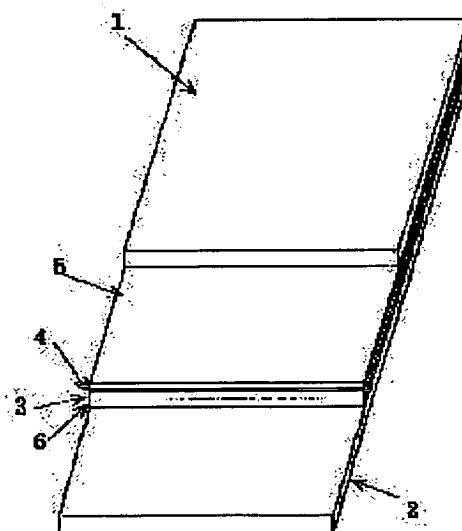
(72)Inventor : HAGIWARA KOSHIRO  
UCHIDA TAKEHIKO

## (54) CURTAIN FOR SHIELDING LIGHT

### (57)Abstract:

PROBLEM TO BE SOLVED: To provide a light curtain excellent in a light shielding property, heat shielding property or the like without sacrificing the decorative property of cloth itself of the curtain by pinching a synthetic resin film formed with a metallic film between two cloths.

SOLUTION: A light shielding curtain has a biaxially stretched polyester film 3 formed with an aluminum evaporated film and pinched between resin made prints 1, 2, and hot melt adhesives 5, 6 having ethylene-vinyl acetate copolymer as the main component are applied to the surface of the film 3 for adhesion. Further, the cloth is selected from clothing fabrics like a drape, print and plain cloth. A method for forming a metallic film on the surface of the synthetic resin film is preferably a vacuum vaporization method from an economical point of view. Also, aluminum is preferable for the metal of metallic film from points of view of the operability, light shielding property, economy or the like. The thickness of the metallic film is selected within 1-15 $\mu$ m of the extent so that the transmission factor of the synthetic resin film formed with the metallic film is less than 5%.



## LEGAL STATUS

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**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the curtain for protection from light. It is related with the object for protection from light and the curtain for thermal insulation which are used by the ordinary home and commercial hotel, a vessel, a car, etc. in more detail.

[0002]

[Description of the Prior Art] In order to raise the amenity of the living environment of work space, such as commercial space, such as habitation space of ordinary homes, a store, a hotel, and a vessel, a car, and office, etc., interiors, such as a carpet, a curtain, and a wall covering material, have played the important role. Especially, as a typical element of the production of an aperture, with harmony of light, heat, and a sound, and the basic function penetrated and covered, a curtain is expressing fanciness, such as aesthetics, luxury, and color, and has played two roles, functionality and fanciness.

[0003] Conventionally, as the object for protection from light, and a curtain for thermal insulation, the drape of thick cloth or the blackout curtain aiming at full protection from light laminates the thick cloth of a precise duplex and the Mie organization, and the resin paint film which has concealment nature in the ground further, or has some which were given by direct coating. Since thick cloth was used for such a conventional object for protection from light, and the curtain for thermal insulation, weight not only becomes heavy, but they were not able to demonstrate fanciness, such as color. Furthermore, in order to hang a heavy curtain, it is necessary to equip the curtain rail with high reinforcement which bears weight.

[0004]

[Problem(s) to be Solved by the Invention] As a result of this invention persons' being in this situation and inquiring wholeheartedly at the sacrifice of the fanciness of the cloth of a curtain itself for the purpose of offering the curtain which was lightweight and was excellent in protection-from-light nature, thermal insulation nature, etc., the thing of structure which made the synthetic-resin film which made the metal vapor-deposit intervene between two cloth came to complete a header and invention for the ability of the above-mentioned purpose to be attained.

[0005]

[Means for Solving the Problem] In order to solve the above-mentioned technical problem, in this invention, the curtain for protection from light characterized by coming to fasten the synthetic-resin film with which the metal thin film was formed between two cloth is offered.

[0006]

[Embodiment of the Invention] Hereafter, this invention is explained to a detail. The cloth in this invention can be chosen from the grounds, such as the thick cloth and print ground which are called a drape, and solid color. It is the generic name of a massive curtain, and by the process, it swells, there are classes, such as \*\* and \*\*\*\*\*, and a drape can weave in a pattern using plain weave, twill, tapisserie des Gobelins, and the yarn dyed beforehand, and is abundant in colors. Taking out thickness as textiles has a device, and it was rich in fanciness, such as a duplex organization, the Mie organization, and a pile

organization, using thick yarn, and has functions, such as protection-from-light nature, thermal insulation nature, heat retaining property, and absorption-of-sound nature, by itself. A material has much spun yarn, such as various synthetic fibers, rayon, and cotton, and filament yarn, and such union is used.

[0007] the print ground -- various kinds -- it is what carried out screen printing of the colored pattern to the ground, and compared with a drape, plain weave, an organization's slanting brocade, etc. are simple, and, generally thickness and its cloth weight are also light. Spun yarn, such as various synthetic fibers, rayon, and cotton, and filament yarn are used for a material, and a print shank begins a peduncle and a geometrical pattern and is rich in character nature.

[0008] Solid color is the generic name of the textiles of the thick cloth which does not have color apparently, and inside thick cloth, and has piece dyeing solid color and before dyeing solid color. Weaving of the piece dyeing solid color is carried out by the jacquard or the Dobby machine using the thread type of a different stain, a before dyeing tone is expressed in many cases, and before dyeing solid color has many things expressing the color tone which has \*\*\*\*\* and depth in an approximate color. Spun yarn, such as various synthetic fibers, rayon, and cotton, and filament yarn are used for a material. The velvet of the pile weave which has weightiness in shading by pliant gloss and a pliant rib is typical.

[0009] since the ground is exposed to strong sunrays or is carried out on rinsing, dry cleaning, etc., the reinforcement of the ground does not arise [ degradation, a dimensional change, discoloration, fading of a color, etc. ] for a short period of time -- as -- the ground -- using the stain and the pigment which demonstrates the color fastness to light which was excellent when blended the light-fast amelioration agent at the time of the \*\* manufacture [ fiber ], or performing shrink-proofing when considering as textile fabrics, or dyeing or printing etc. needs to be considered.

[0010] The combination of the ground has a drape, the print ground and a drape, solid color and the print ground, the print ground and the print ground, solid color and solid color, solid color, etc. Improvement in lightweight-izing of a product curtain and fanciness can be aimed at by choosing the combination which does not contain a drape especially.

[0011] if the synthetic-resin film in this invention is what can form a metaled thin film -- especially -- a limit . As synthetic resin, the partial saponification object of polyolefines, such as polyester, such as polyethylene terephthalate and polybutylene terephthalate, polyethylene, and polypropylene, an ethylene-vinylacetate copolymer, poly virile alcohol, and poly virile alcohol, polyamides, a polycarbonate, etc. are mentioned. Although an unstretched film is sufficient as a film, that by which biaxial stretching was carried out is excellent in physical reinforcement, and more desirable. Especially, the polyethylene terephthalate film by which biaxial stretching was carried out is suitable.

[0012] If too not much thick, flexibility will be lost, it becomes difficult preferably to form a metaled thin film, if too not much thin, and the thickness of a synthetic-resin film is not all desirable. Thickness is chosen in 20-150 micrometers, and the range especially of a desirable thing is 30-100 micrometers especially.

[0013] As for the synthetic-resin film, the metaled thin film needs to be formed. The metaled thin film may be formed in both sides of a film, and may be only one side. It is suitable to form only in one side from a viewpoint of film manufacture that the metaled thin film is formed. There is especially no limit in the approach of forming the above thin films in the front face of a synthetic-resin film, and it can be based on vacuum evaporation technique, the sputtering method, the ion plating method, etc. It is desirable to be based on a vacuum deposition method from an economical viewpoint.

[0014] As a metal of the metal thin film formed in a synthetic-resin film, aluminum, gold, silver, copper, chromium, nickel, zinc, a metallic oxide, etc. are mentioned. Especially, viewpoints, such as workability, protection-from-light nature, and economical efficiency, to aluminum is suitable. When the thickness of a metal thin film is too thin not much, it is inferior to protection-from-light nature, and it continues throughout resulting [ from ultraviolet rays ] in infrared radiation with the increment in the thickness of a thin film, and its cutoff nature improves. The thickness of a metal thin film is chosen in 1-15 micrometers so that the permeability of the visible ray of the synthetic-resin film in which the metal

thin film was formed may become less than 5%.

[0015] In order to carry out the laminating of the above-mentioned cloth to both the front faces of the synthetic-resin film in which the thin film of said metal was formed, it is desirable to apply hot melt adhesive to both the front faces of a film, and to paste them. As hot melt adhesive, polyethylene, an ethylene-vinylacetate copolymer, atactic polypropylene, a polyisobutylene, a polyamide, polyester, etc. are used as a principal component, and various additives, such as waxes besides being rosin system resin, petroleum resin, etc. as an adhesion endowment agent, an antioxidant, and a plasticizer, are blended with this.

[0016] Any of the shape of the shape of the shape of a paste and a film and a web are sufficient as the gestalt of hot melt adhesive. When hot melt adhesive is a paste-like, it applies the whole synthetic-resin film front face, two or more lines, or in the shape of a grid. The coverage of hot melt adhesive to a synthetic-resin film can be suitably chosen according to the class of cloth, the class of synthetic-resin film, the class of adhesives, etc. In addition, in order to strengthen the interface of a synthetic-resin film and adhesives, it is desirable to apply a primer to the front face of a synthetic-resin film.

[0017] When hot melt adhesive has the shape of the shape of a film, and a web, it arranges between a synthetic-resin film and cloth the whole surface, two or more lines, or in the shape of a grid, and heats to it, and a synthetic-resin film and cloth are pasted up. The thickness of the hot melt adhesive of the shape of the shape of a film and a web can be suitably chosen according to the class of cloth, the class of synthetic-resin film, the class of adhesives, etc. It is desirable to apply a primer to the front face of a synthetic-resin film also in this case.

[0018] Hereafter, although this invention is explained to a detail based on a drawing, this invention is not limited to the following written examples, unless the meaning is exceeded. In addition, each component is shown without relation [ thickness / actual ] in order to make intelligible structure of the curtain for protection from light applied to this invention by a diagram. Drawing 1 is the perspective view of an example of the curtain for protection from light concerning this invention. In drawing, 1 and 2 are the print grounds made from a synthetic fiber, and 3 is the vacuum-plating-of-aluminium film and hot melt adhesive which biaxial-stretching polyester film and 4 used the ethylene-vinylacetate copolymer to five, and six used as the principal component. In drawing 1, although the vacuum-plating-of-aluminium film 4 is formed only in one side of a film 3, it is as having described above that you may form in both sides.

[0019] The curtain for protection from light concerning this invention is as having explained above, and various two cloth can be combined. For example, if the cloth facing the outdoors is made into a plain thing and the cloth which faces indoors is used as the print ground, it can consider as the curtain excellent in fanciness. Moreover, since it is not necessary to shade and to insulate with itself completely also when using a drape, it is not necessary to make it extreme thick cloth, therefore lightweight-ization can be achieved. Furthermore, even if a beam of light and a heat ray will penetrate the cloth arranged to the outdoors side if the metal thin film side of a synthetic-resin film is arranged to an outdoors side in case the curtain for protection from light concerning this invention is actually used, transparency is prevented with a metal thin film. The curtain for protection from light concerning this invention can be suitably used as a curtain for protection from light of apertures, such as an ordinary home and commercial hotel, and a vessel, a car.

[0020]

[Effect of the Invention] this invention is as follows -- doing advantageous effectiveness so specially, the utility value on the industry is size very much.

1. Since the curtain for protection from light concerning this invention can cover nearly completely transparency of a beam of light and a heat ray with the metal thin film of a synthetic-resin film, it is suitable as the object for protection from light, and a curtain for thermal insulation.
2. Since it is not necessary to make it into extreme thick cloth since it does not need to shade and insulate with itself completely also when using a drape at the sacrifice of the flexibility of cloth, since the curtain for protection from light concerning this invention performs neither lamination nor coating for the resin paint film which has direct concealment nature in cloth like the conventional curtain for

protection from light, and it can utilize thin cloth, lightweight-izing of a product is possible for it.

3. everything but the function of [ since the curtain for protection from light concerning this invention can utilize the print ground which was rich in rose ITEI, such as color, ] protection-from-light nature and thermal insulation nature -- fanciness -- \*\* -- the function to say can also be demonstrated.

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CLAIMS

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[Claim(s)]

[Claim 1] The curtain for protection from light characterized by coming to fasten the synthetic-resin film with which the metal thin film was formed between two cloth.

[Claim 2] The curtain for protection from light according to claim 1 in which a metal thin film is formed by the vacuum deposition method.

[Claim 3] The claim 1 publication whose permeability of the visible ray of the synthetic-resin film with which the metal thin film was formed is less than 5%, or the curtain for protection from light according to claim 2.

[Claim 4] The curtain for protection from light given in claim 1 thru/or claim 3 any 1 term which cloth and a synthetic-resin film come to paste up with hot melt adhesive.

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